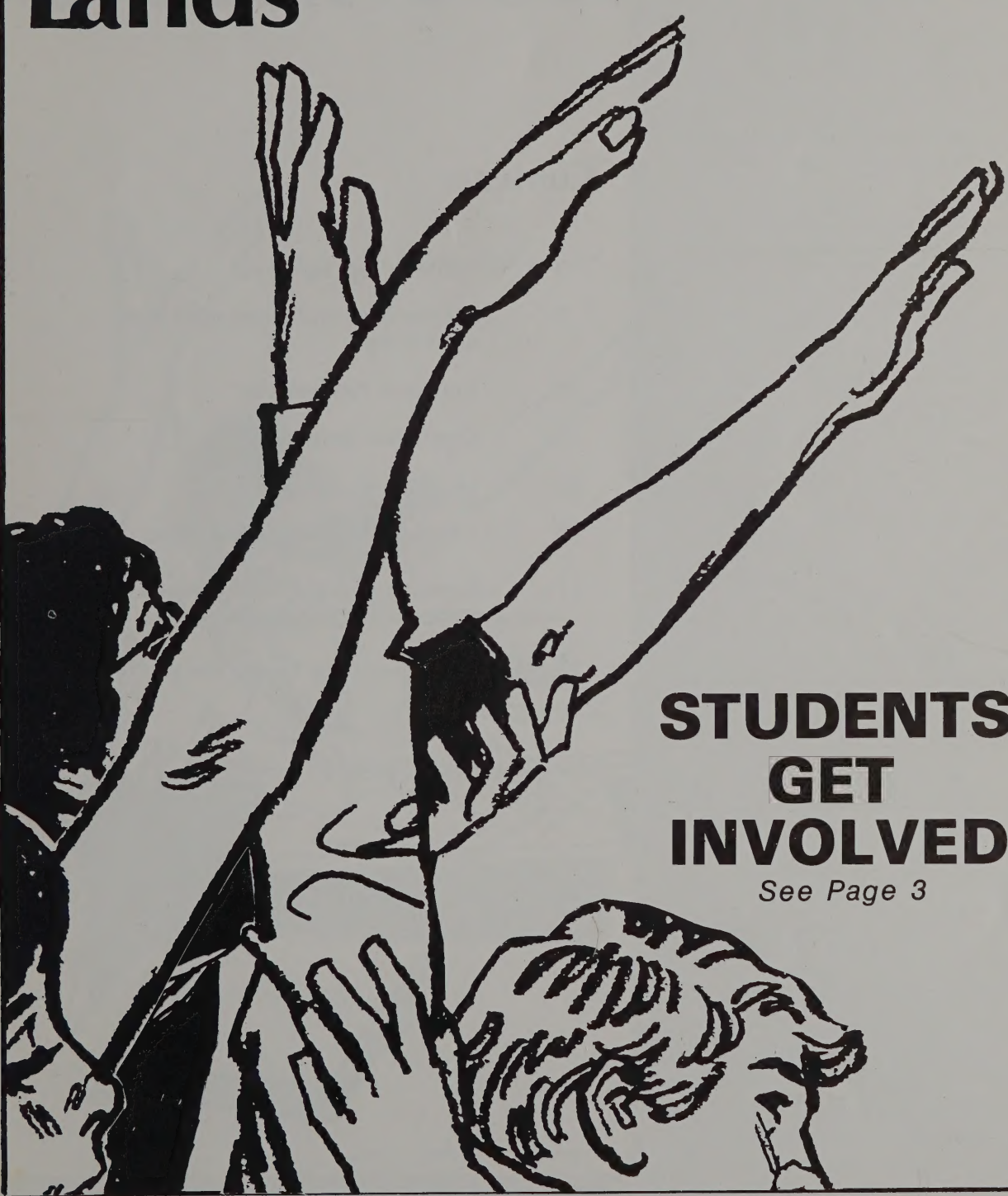


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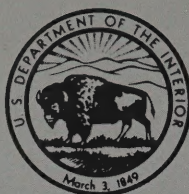
Autumn 1983

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**STUDENTS
GET
INVOLVED**

See Page 3



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

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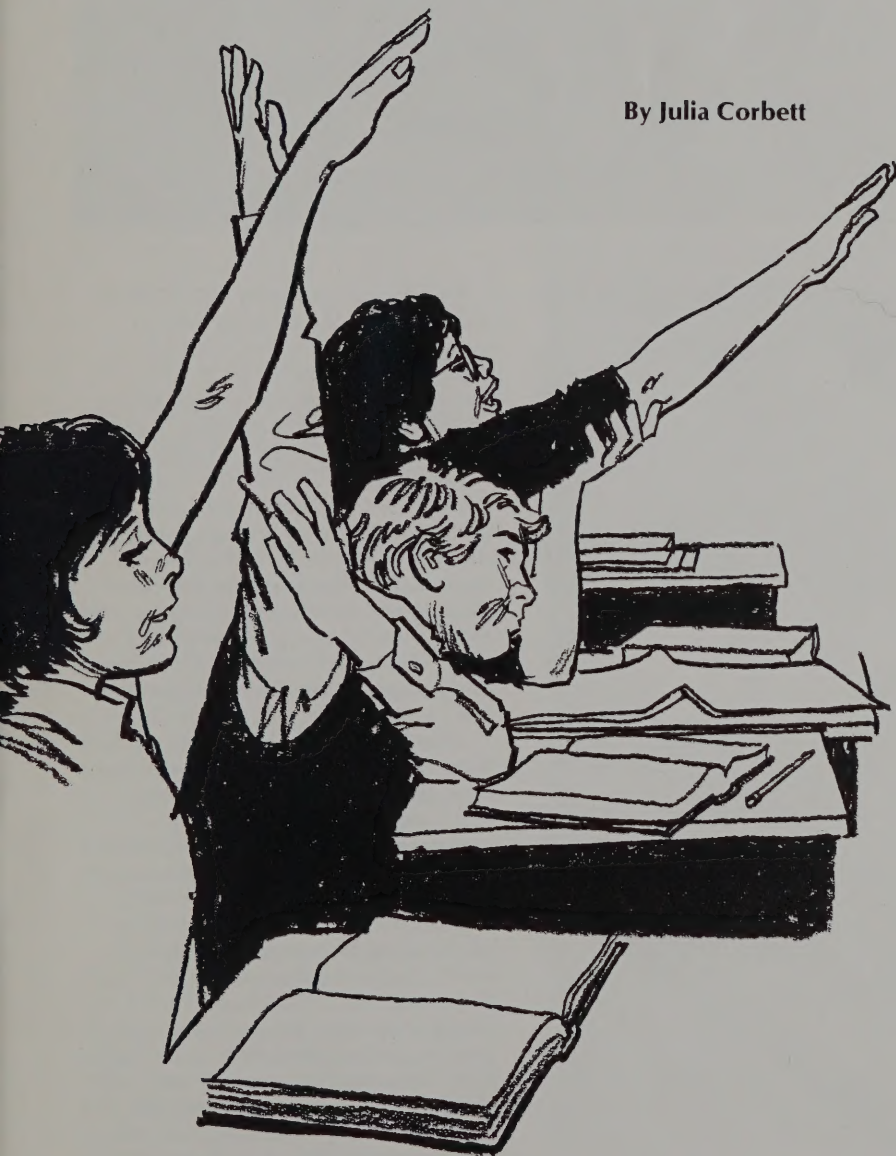
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STUDENTS GET INVOLVED

By Julia Corbett



At a time when Federal agencies are finding it harder and harder to bring the public out to comment and participate, a group of fifth and sixth graders in Idaho Falls, Idaho, has gotten involved with public participation at an early age.

The project, under the inspiration of teacher Cam Bradley, involves four PACE classes in Idaho Falls School District 91. PACE, or the Program for Academic Enrichment, draws together 65 students identified as gifted and talented from all schools in the District for one day a week of special learning projects. Public involvement, along with robot-building and computer programming, were among their most recent topics.

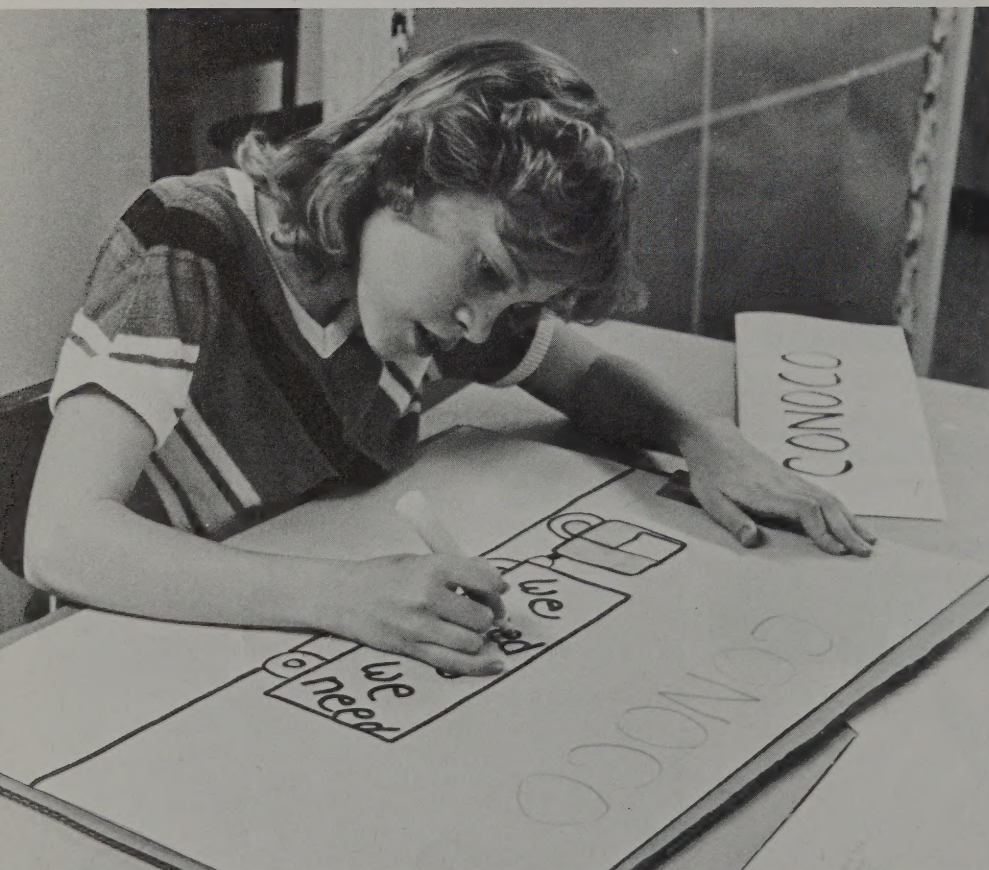
Bradley chose to follow the progress of the *Eastern Idaho Wilderness Environmental Impact Statement* for the public involvement exercise. The Environmental Impact Statement (EIS), written by the Idaho Falls District of the Bureau of Land Management (BLM), studies the suitability of five areas in southeastern Idaho for possible wilderness designation.

"The public is being asked to help BLM make lots of land use decisions now," she said. "It's important for people to learn how to become involved in that process, how to see the different sides of an issue, and how to read and analyze a document like this."

Class Visits Study Area

Bradley's PACE class of 15 students began the project last fall, long before the draft EIS was published. The class first phoned the local BLM District Office to get on the wilderness mailing list. The next step was a trip to one of the wilderness study areas, the Hell's Half Acre lava flow, where they rated the scenic quality and studied the various lava formations and vegetation. (Hell's Half Acre is the only area recommended for wilderness designation in BLM's preferred alternative.)

A fractured pressure ridge is a feature of the Hell's Half Acre lava flow in the Bureau of Land Management's Idaho Falls District.



Rebecca Scoresby prepare an illustration to present during a mock hearing conducted by her class.

Back in the classroom, the students wrote paragraphs on what they believed the best use of the area would be. "By that time," Bradley commented, "they had a good grasp of the area and its uniqueness, but not of the public involvement angle."

When the EIS arrived, the class discussed what kinds of people and groups might be for and against wilderness designation of the lava area. As a result of that exercise, the class divided into five mock, and not so mock, interest groups: "Lava Stone, Inc.," "Conoco," "Idaho Environmental Council," "Too Much Wilderness," and "Idaho Wilderness Youths."

"The kids learned how to see something from another's point of view and how differently the various groups feel," she said.

The students then dissected the EIS, with the help of study questions from Bradley, for information that would support their group's interests. They answered questions such as "With which alternative do you stand to lose the most?" And "Which alternative would allow your group to pursue its own interests to the fullest, and why?" They learned what "impact" and "salable" meant, what a study said Idahoans felt about wilderness, and what part recreation played in the local economy. Then came time to pull it all together.

"The thought process is advanced in



Hell's Half Acre Lava Flow in Idaho

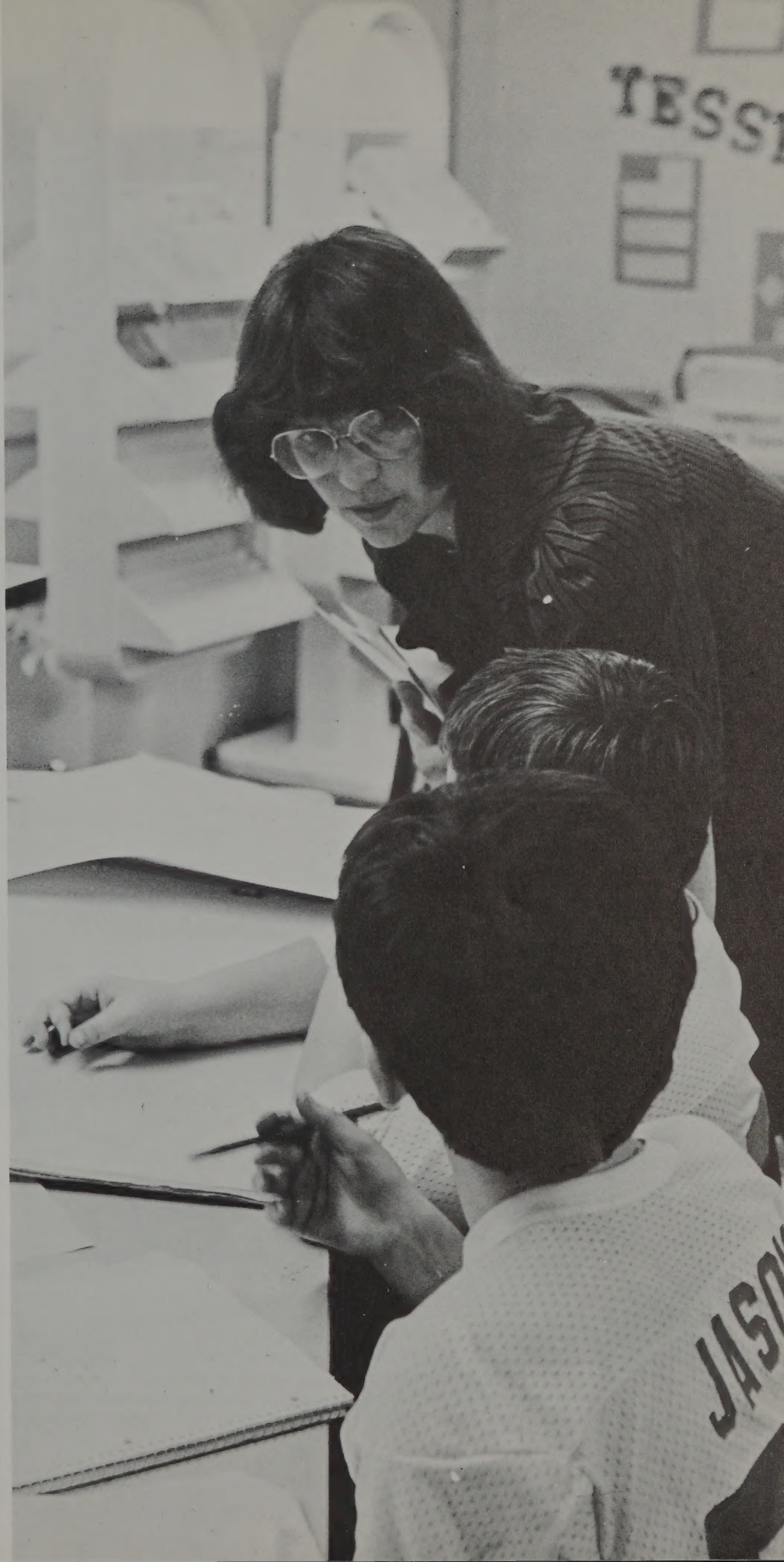
PACE," Bradley explained. "The students must process the information, analyze it and finally present their findings."

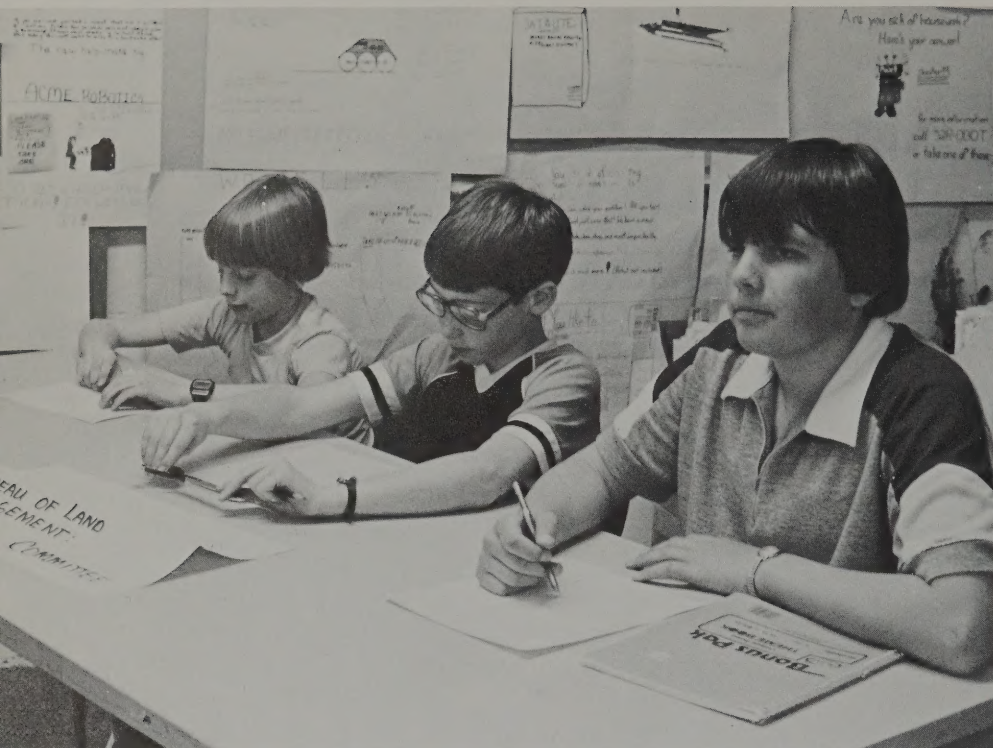
Mock Hearing

A mock EIS hearing in April became the format for the students' presentations. Besides accepting written comments, BLM requires that a public hearing be held on wilderness EISs as a way for the public to participate and express opinions. For the mock hearing, the interest groups were told to develop short presentations, complete with visual aids, as they would for a BLM hearing. They were to state their reasons why they were for or against designating Hell's Half Acre as wilderness.

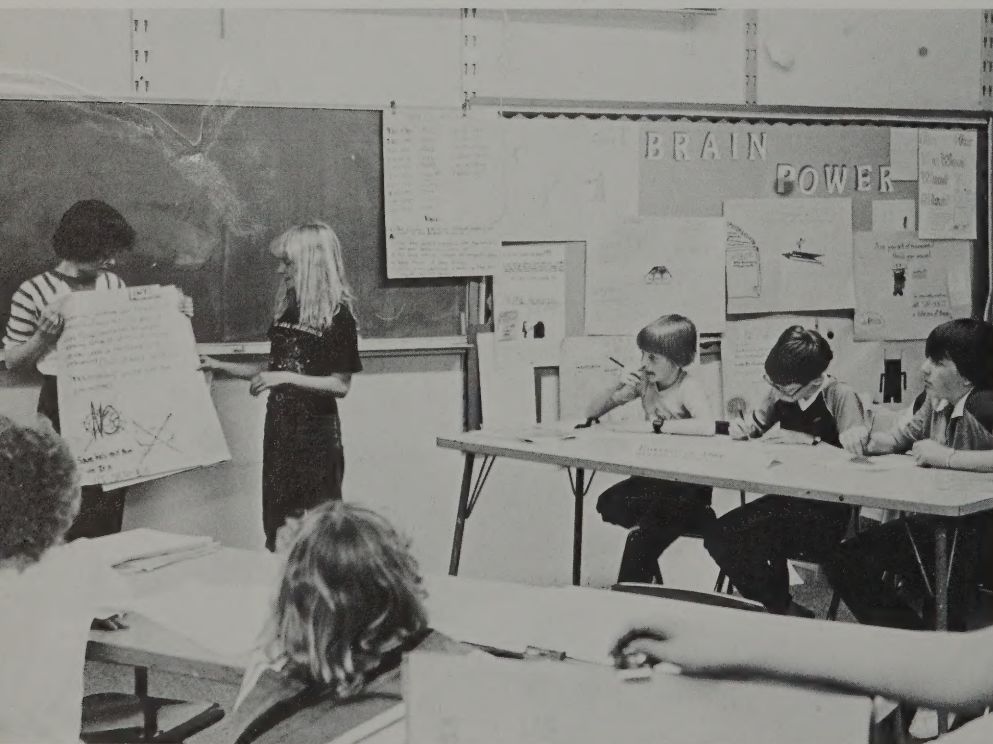
Meanwhile, the mock hearing committee gathered to develop a set of criteria by which they would judge the presentations and make their decision. "We've used this problem-solving technique before in other activities. Problem solving is a part of the PACE curriculum, and this time we got to apply it to a real problem," she said.

Video cameras rolling, students representing fictitious interest groups





John Hart, Kirk Jensen and Matthew Jose take notes as they play the role of a BLM committee listening to the recommendations of interested citizen groups.



Rebecca Sailor and Betsy Sihvonon present information during study by their class of the public participation process followed in considering a wilderness study area.

stated their cases to the student hearing committee, their classmates, and a real BLM observer. Representatives of "Lava Stone, Inc." said if Hell's Half Acre is designated wilderness they might run out of the decorative lava stone to mine, which would hurt income and employment. The "Idaho Environmental Council," favoring wilderness designation, presented the committee with a list of plants and animals that could be harmed by development and vehicles. "Too Much Wilderness" argued that this land is in Idaho and that Idahoans don't want any more wilderness.

The student hearing committee then recessed to compile findings. The committee rated each group according to how well it addressed five criteria: how designation would affect people, how people would accept wilderness designation, how the environment would be affected, which alternative would cost the least, and which would be the quickest to implement. The final decision of Bradley's class: Hell's Half Acre should be designated wilderness. The "Idaho Environmental Council" and the "Idaho Wilderness Youths" had come up with more and stronger arguments, the committee said.

Project Wrap-Up

In a wrap-up of the hearing, Bradley asked her students what they had learned from the presentations. The group consensus was that it takes a lot of time to prepare and to get points across. Others believed it would have been easier to represent a particular interest group if they could talk to actual people in it.

"I think issues make learning more interesting," Bradley said. "They not only learned about the ecosystem involved, they got to take it one step further. Learning about public involvement in this situation takes some of the fear out of it. Their enthusiasm for the process is exciting."

Besides writing individual public comment letters to BLM, many of the students attended the real BLM public hearing in early May. One student presented testimony representative of the class opinion before the actual BLM panel. "He did it like a pro, like he'd been doing that for a long time," commented a member of the panel.

Julia Corbett is a public affairs specialist in the Idaho Falls District.

PINYON PINE NUTS

NEVADA'S NEW CASH CROP

When pinyon pine cones mature, a picker uses a light ladder to reach the clusters on high branches.

By Jack Matuska



Pinyon pine nuts, once important to many southwestern Indians for basic survival, are again becoming important, this time as an annual cash crop in Nevada. No longer do the Shoshone, Paiute, or Washoe Indian tribes rely on pine nuts as their basic staple food, without which winter would have surely turned into a time of disaster. Rather, pine nuts have now become an important source of income for both Indian and white man alike, and a source of revenue for BLM in Nevada.

In 1980, when BLM's Battle Mountain District offered the first competitive bid pine nut sale to the public, bids were received to harvest nearly 75,000 pounds of pine nuts. This represented revenues of almost \$7,500 to BLM in a District where only \$1,600 was received the year before from all woodland product sales. Few could comprehend what 37 tons of pine nuts would look like, nor did many believe it was possible to harvest so many nuts. By the end of the year, 93,000 pounds of pine nuts had been harv-

ested from the Battle Mountain District, resulting in over \$9,000 in revenue.

The trend continued into 1981, when more than 114,000 pounds were collected from the Battle Mountain District and over 162,000 pounds from BLM administered lands Statewide.

Nobody knows what the ultimate potential is from pine nut harvesting. An extensive bumper crop could result in a harvest of over a million pounds from Nevada public lands alone. At a woodland product value of



20 cents per pound, this represents a potential \$200,000 in revenue.

The Pinyon-Juniper Woodlands

Over 60 million acres of the southwestern terrain is dominated by pinyon-juniper woodland. Pinyons are small bush-like trees, with scale-like foliage, that reach 40 feet in height.

Pinyons, being more moisture demanding, occupy the higher elevational sites within these woodlands. Junipers, on the other hand, are more drought resistant and tend to dominate the lower zones. A pinyon-juniper mix is typical of mid-elevation sites, and it is within this strata that the highest tree densities are normally found.

There are 11 known species of pinyon pine found growing in the southwestern United States and in Mexico. These pinyons, sometimes known as North American nut pines, produce large edible seeds lacking the "wings" of most species of pine. The wings on most pine species allow

seeds to be carried off by the wind and disseminated. However, nearly all the pine nuts dropping from a pinyon tree scatter directly underneath the tree. Birds, chipmunks, squirrels, and other rodents are normally responsible for dissemination of pinyon seed. Flocks of pinyon jays, in particular, have been known to swarm into areas, stripping trees of pine nuts and caching large amounts for later use.

Early native Americans relied on pine nuts for food during the harsh winters of the Southwest. During the years of widespread pine nut crop failure, many would fall prey to hunger, disease, and death.

Development of Pinyon Cones

It takes three growing seasons for the formation and maturation of cones of pinyons. During year one, microscopic cones are formed in the dormant buds of the tree. By the summer of year two, cones emerge from the buds and become pollinated. By mid-October, the cones are again

dormant for the winter.

During May of year three, cones again become active, and rapidly put on growth throughout the summer. By September, they are ready to harvest.

It is essential that any harvesting of mature cones not interfere with the growth and development of younger cones on the same tree. Likewise, the number of cones harvested must not be so many that the food sources for wildlife and seed source for future pinyon trees is depleted in any given area.

Predicting Pine Nut Crops

The potential crop can be roughly determined up to 16 months before maturity from the relative number of immature cones on a tree. If immature cones are absent or few, it is obvious that a heavy commercial crop will not be produced. Presence of a large number of immature cones is still no guarantee of a heavy crop because of many factors, such as insects, disease,



Pinyon pine cones are spread in the hot sun, which causes them to open and release their seeds.

drought, or other unfavorable weather conditions.

In 1982, much of the pine nut crop throughout central Nevada failed suddenly only months before maturity for no explainable reason. Commercial pine nut harvesters speculate that a late heavy frost during the spring may have been responsible for the widespread failure. Others claim that drought was the determining factor.

In still another instance, during the fall of 1978, unseasonably cold weather and freezing rain during the middle of September destroyed much of the crop.

Harvesting Pine Nuts Indian Style

To early native Americans of the Great Basin, the annual pine nut harvest was a very serious business. In most cases, the pine nuts they gathered during the fall would have to sustain them through the long cold winters.

During September, tribes of Sho-

shones, Paiutes, and Washoes could be found throughout the pine nut forests gathering, roasting, eating, and storing as many nuts as they could find.

Green cones collected during early September were usually roasted open for immediate use. When cones had finally opened on the trees, men would beat the branches with hooked sticks to shake loose the cones and nuts. The women and children would pick the nuts from the ground.

Nuts were roasted by shuffling them in a shallow basket with red hot coals. A constant shuffling motion was required to prevent the nuts from becoming scorched. They would then be shelled on a stone metate (flat rock) by gently rolling a huller (hand-held grind stone) over the roasted nuts. The broken shells would then be removed from the nut meats by gently tossing both into the air and allowing the wind to carry away the shells. After the shells were removed, nuts were again roasted. Nuts were mashed

into a flour and used in soups, breads, and other Indian foods.

Today's Commercial Harvesting

Pine nuts have been commercially harvested for many years, but it was not until BLM began to regulate these harvests that their importance and potential were fully realized. Since pine nuts are a marketable commodity, BLM is required by law to receive a fair market value for them.

To sell pine nuts commercially, areas with the potential of producing a pine nut crop are designated. Some areas may be over 50,000 acres in size and located far from any population center. Each designated area is advertised as being available for harvest. Sales are made using sealed bids; the high bidder being awarded the sale.

Harvesting begins in early September as soon as it is determined that the green, closed cones have fully matured.

To pick the green cones, the tree is scaled using a light aluminum ladder.



Cone scales and other kinds of trash are removed, as pinyon pine nuts drop through the screen.

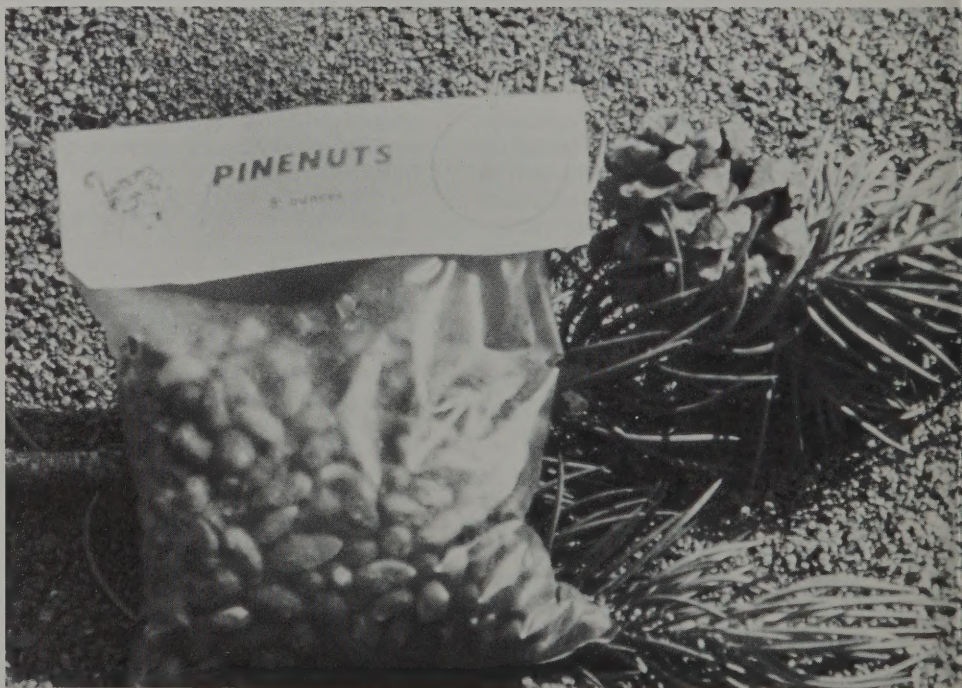
Any cones within reach are picked and dropped into a canvas sack which hangs from the picker's neck.

At the end of the day, the full burlap sacks are collected and transported to the site where they are temporarily stockpiled, or, if the weather is warm and clear, spread out to dry.

By the first of October, both the green cones on the trees and those already harvested in sacks are fully opened. The pine nut pickers look forward to this time since the dry cones weigh much less than the green cones they were picking earlier.

When "dry picking" starts, so does the process of thrashing all those bushels of cones previously collected and dried. Thrashing is the process of physically or mechanically shaking loose the pine nuts from the cones.

The end product of thrashing is called "dirty nuts." Dirty nuts consist of about 90 percent good full pine nuts and 10 percent blanks and trash.



By the time pinyon pine nuts reach the grocer's shelf, their value has increased more than ten fold.

Blanks are nuts which were never pollinated or fully formed. Trash is the cone bracts, pine needles, dust, etc., which became mixed with the nuts during harvesting.

Dirty nuts are first screened to remove the small unmarketable nuts and the smaller trash. After screening, the nuts are run through a blower. The light trash and blank nuts are blown away into a pile.

After the nuts are clean, they are almost always given a shine to make them even more appealing when they reach the market. Nuts are shined by rotating them in a cement mixer for about five minutes with a little vegetable oil. This also seals the nuts, preventing weight loss from evaporation.

The pine nuts are now ready to be sold. Almost all pine nut harvesters pack the nuts in 100 pound burlap sacks to be sold. They usually receive from \$1.75 to \$2.50 per pound by selling to wholesalers. Wholesalers in turn repack the nuts in smaller packages for the retail customer. By the time pine nuts reach the grocery and health food stores, prices have reached \$3.50 to \$5.00 per pound.

Recreational Harvesting

Pine nut picking also has become a popular recreational activity for those who enjoy experiencing the solitude the woodlands have to offer.

To insure that trees and other woodland resources remain productive for future enjoyment, visiting nut pickers should practice good outdoor manners by keeping vehicles on maintained roads, avoiding damage to trees during picking, and by keeping the area free of litter. The local BLM office should be contacted to locate areas where there are harvestable crops and to receive information concerning harvesting regulations.

The pinyon pine is the State tree of Nevada.

Jack Matuska is a forester in the Shoshone-Eureka Resource Area of the Battle Mountain District in Nevada.

Cleaned pinyon pine nuts are poured into 100-pound bags for shipment to the wholesaler.



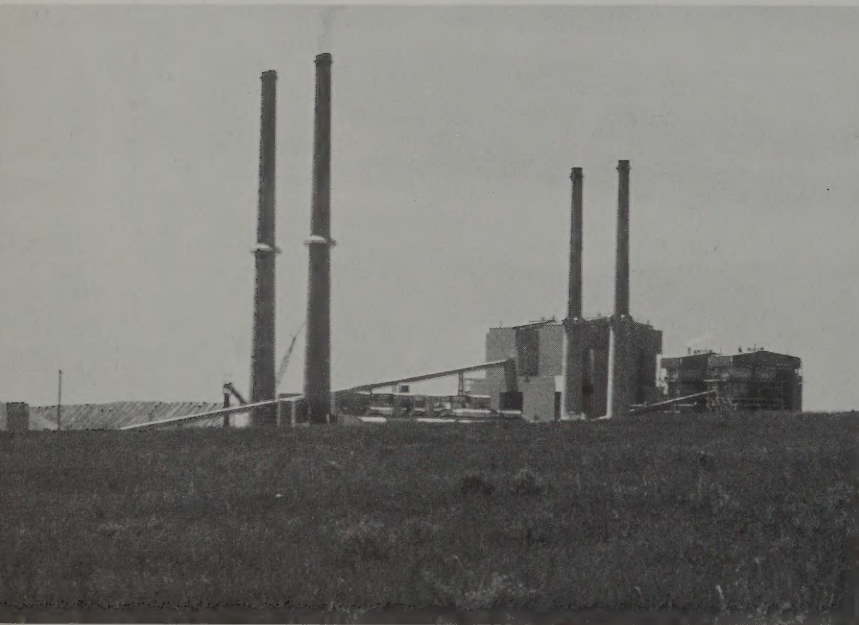


These cows are grazing in a pasture established in 1977 following coal mining two years earlier. Grasses seeded in the area included western wheatgrass, crested wheatgrass, green needlegrass, and smooth brome. More than 100 breeder heifers grazed the area last summer. The water well at the windmill is 120 feet deep.

RENEWED PRODUCTIVITY

After coal is removed, other uses blossom again

Jackie Olson



Coal mined nearby fuels the steam turbines at the Colstrip electric power generating plant.



Reclamation of a mined area included placement of this snag (dead tree) for use as a raptor perch.



All water used in mining must be contained on the site and is usually collected in a sediment pond such as this. Aquatic plants and native trees including green ash, boxelder, chokecherry, and cottonwood enhance the shoreline. Ten thousand largemouth bass were used to stock the pond, which also provides water for wildlife and livestock. Removal of federal coal from this site and cooperative reclamation actions created this public recreation area.

Reclamation—the rehabilitation of mined land—is an important aspect of any surface mining operation. Mining companies are required by the Surface Mining Control and Reclamation Act to file reclamation plans before mining begins.

When coal is mined, the topsoil is removed and re-used. The material between the topsoil and coal, or overburden, is stored and used to fill

the cavity after the coal has been removed. Then it is graded to blend with the surrounding landscape and steps are taken to prevent erosion. When the topsoil is replaced, it is seeded according to the reclamation plan.

Most mined land is reclaimed to its original use, but reclamation can be used to improve conditions or provide for alternate use. Sometimes the

amount or type of forage for grazing can be increased or improved. In other cases, grazing land can be converted to crop land, or vice versa.

These photos show some of the techniques and results of reclamation at Western Energy's Rosebud Mine in Colstrip, Montana.

Jackie Olson is public affairs specialist in the Montana State Office.



The local roping club grazes steers on this reclaimed area, which maintains a desirable diversity of vegetation.

OPERATION RESPECT

By Punkie Garretson



Jean Lee, president of the New Mexico CowBelles, describes OPERATION RESPECT during a July ceremony that expanded the cooperative program statewide. Representing cooperating state and federal agencies, from left to right at the head table, are Jean Hassell, regional forester, Southwestern Region, Forest Service, U.S. Department of Agriculture; Harold Olson, director of the New Mexico Department of Game and Fish; Jim Baca, land commissioner for the State of New Mexico; Garrey E. Carruthers, assistant secretary for land and water resources, U.S. Department of the Interior; and Charles W. Luscher, New Mexico state director, Bureau of Land Management, U.S. Department of the Interior.

New Mexico Groups Cooperate to Prevent Vandalism



Because of a lot of hard work by a handful of dedicated ranch ladies in three southwestern counties of New Mexico, an educational program known as **OPERATION RESPECT** officially went statewide during a formal ceremony in Santa Fe on July 6, 1983. Assistant Secretary of the Interior Garrey Carruthers presided while representatives of the New Mexico CowBelles, Bureau of Land Management, Forest Service, New Mexico Department of Game and Fish, and the New Mexico State Land Office signed the appropriate documents of agreement to kick off a year of intensive activity.

OPERATION RESPECT is a cooperative effort originally undertaken in 1982 by the New Mexico CowBelles, BLM, and the New Mexico Department of Game and Fish. The New Mexico CowBelles is an affiliate of the American National CowBelles, an organization committed to the promotion of beef. **OPERATION RESPECT** began on a trial basis in an attempt to cut down on the ever increasing problem of needless destruction of property, livestock, and wildlife on New Mexico's rangeland. The concept of **OPERATION RESPECT** is not new, as the New Mexico program was patterned after a similar effort in Colorado led by BLM and the Colorado Women in Mining.

The need for a program such as **OPERATION RESPECT** arose largely because of the increasing use of the public land by individuals who have primarily urban backgrounds. A great deal of confusion has occurred in New Mexico because of its checkerboard land ownership pattern. "Many

of the people who want to enjoy New Mexico's open spaces are not aware of the others who also use public land, such as ranchers, miners, and mineral lessees. These users depend on public land for their living, and most have a sizable investment in property and equipment on the land which is used on a day by day basis," says Bill Luscher, BLM State Director. "When someone either accidentally or intentionally shoots a hole with a high powered rifle through a windmill gear box, then that water source becomes inoperative. This may mean that livestock and wildlife in that pasture have no water to drink. Animals can't last long in our arid land without water, and we may not be able to locate problems soon enough to take care of them."

OPERATION RESPECT is designed to:

- Encourage public cooperation with ranchers;
- Promote respect for property and equipment;
- Educate the leisure-time public about land, livestock, and wildlife;
- Inform the public about the varied land ownership throughout the State;
- Teach the "do's" and "don'ts" when using the lands of New Mexico.

Because the problem of vandalism is common not only to the rancher but to State and Federal land management agencies alike, the USDA Forest Service and the New Mexico State Land Office joined forces with the original

sponsors of **OPERATION RESPECT** in the spring of this year.

OPERATION RESPECT is truly a cooperative effort. Bob Jones, Crow Flat rancher and president of the New Mexico Cattlegrowers Association, has contributed his artistic skills to the effort by creating the calf which is the symbol used on all **OPERATION RESPECT** material. The Public Service Company of New Mexico is distributing information to over 245,000 of its customers across the State, while Governor Toney Anaya has declared October **OPERATION RESPECT** month in the State of New Mexico.

Educational material in the form of pamphlets, litter bags, bookmarks, and activity sheets for children are being distributed statewide by the 20 CowBelle chapters. Special emphasis on the program was presented to the hundreds of thousands of visitors to the New Mexico State Fair. Hunting license vendors throughout the State distribute the information to hunters.

"Vandalism is expensive to us all," says Luscher. "It is gratifying to know that private groups as well as State and Federal agencies are willing and able to work together to combat one of New Mexico's major land management problems."

OPERATION RESPECT invites people to enjoy New Mexico outdoors, meanwhile respecting the rights of others.

Punkie Garretson is a public affairs specialist in BLM's Las Cruces District.

Montana Exchanges Protect Public Values

By Jackie Olson

Recreation opportunities on public lands in Montana will be expanded as a result of land exchanges completed by the Bureau of Land Management.

In the last year, BLM has acquired land near its Holter Lake recreation site north of Helena, an island in the Yellowstone River near Hysham, and an easement along the Wild and Scenic Upper Missouri River.

As a result of exchanges, the public has ownership of nearly 6,000 acres of prime shorefront land along Holter Lake. The lands acquired in December complement the existing BLM recrea-

tion site and campground, which is adjacent to the Gates of the Mountains Wilderness and the Beartooth Game Management Area.

"Portions of the area might have been subdivided for private use, but now BLM has preserved about 11 miles of shoreline in its natural state," according to Jack McIntosh, BLM district manager in Butte. "The public can use this area for boating, camping, hiking, picnicking and swimming. Aside from its value for recreational activities, the area is scenic and is part of the historic Lewis and Clark trail. It also contains important wildlife habitat

for elk, bighorn sheep, bald eagles and peregrine falcons."

The scenic easement acquired along the Wild and Scenic Missouri River will preserve an important Lewis and Clark campsite and about 7.5 miles of river frontage in the surrounding area in its natural state. The easement also provides for public use of a 130-acre area for camping near the mouth of Eagle Creek. Nearly 2,000 river floaters pass through the area each summer.

"This area is probably the most scenic, most-photographed and culturally rich portion of the Wild and Scenic River," said Glenn Freeman,

The Lewis and Clark Expedition camped here on May 31, 1805, where Eagle Creek flows into the Missouri River. BLM acquisition of an easement permits public use of the site by river floaters and others.

Photo by Del Harding





Howerly Island, in the Yellowstone River west of Hysham, Montana, provides opportunities for camping, hunting, and other recreation.

Photo by Dave Vickery

Lewistown district manager. "Lewis and Clark camped in the area in 1805 and described its beauty in their journals. The government snagboat Mandan used to tie up here, and a member of its crew homesteaded the area. At one time, the settlement had a post office, blacksmith shop and wagon roads. Now it's a peaceful camping spot along the river.

"We think of scenic easements as a way to look toward the future and protect the values that contributed to the wild and scenic designation," Freeman said.

Acquisition of Howerly Island should enhance public recreational use of the Yellowstone River. The 585-acre island is about five miles west of Hysham and contains important habitat for deer, pheasant and eagles. It will provide a spot on the river for public camping. A county road provides river access near the island. Opportunities for camping and hunting are numerous.

"The island is valuable since it complements the Isaac Homestead Wildlife Management Area several miles north," said Ray Brubaker, Miles City district manager. "There had been rumors that the native cottonwood and ash trees on the island would be

logged. BLM wanted to acquire the island to protect its native vegetation and wildlife habitat."

Land exchanges enhance management of the public lands by consolidating areas where there are important resources and public values, while disposing of marginal lands that are difficult and expensive to manage.

Last December, BLM acquired about 400 acres near Holter Lake, 79 acres of Howerly Island, a portion of the 3,300-acre easement between Coal Banks Landing and Judith Landing, and about 3,000 acres in Garfield County in exchange for about 12,600 acres of lands scattered throughout the grazing allotment of a Jordan rancher.

The remainder of the easement was acquired in January in exchange for 19 scattered grazing tracts totalling 1,700 acres. The remainder of Howerly Island was acquired in exchange for 2,000 acres in 32 parcels in April.

In all of the exchanges, appraisers determined the lands and easements were of comparable value.

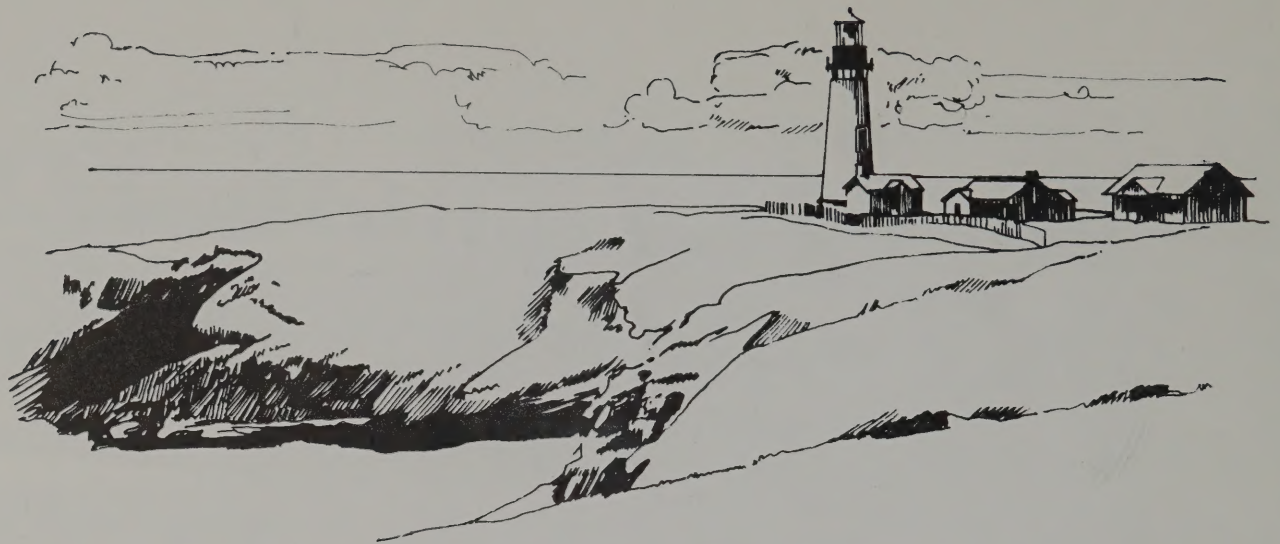
BLM in Montana and the Dakotas administers more than eight million acres of land in about 10,000 parcels. About 2,500 parcels can be character-

ized as scattered and isolated from other BLM lands. Parcels of this kind are most likely to be offered to existing users or adjacent landowners in exchange for lands they own that will improve BLM's land pattern.

Many scattered tracts of BLM land lack legal access and do not contain important public values sufficient to justify Federal management. That makes them difficult and expensive for BLM to manage. These tracts can often be bothersome to surrounding landowners, and, when located near populated areas, can often encounter trespass and litter problems.

Land exchanges represent one method BLM uses to acquire lands valuable for public use without spending tax dollars, while at the same time reducing the cost of administering scattered parcels with little public value.

Jackie Olson is a public affairs specialist in BLM's Montana State Office, Billings.



Yaquina Head Plans Reviewed



Rocky islets off the point of Yaquina Head Outstanding Natural Area are the habitat of many marine birds.



A stairway on Yaquina Head leads to tidepools for the study of marine life.

Hundreds of students visit the area each year.

Public Law 96-199 of March 5, 1980, resulted in the creation of Yaquina Head Outstanding Natural Area (ONA) just north of Newport in Lincoln County, Oregon.

The Yaquina Head ONA, managed by the Bureau of Land Management's Salem District, is a popular tourist attraction. The last remaining segment of privately owned land on Yaquina Head was purchased earlier this year, bringing the entire headland under public ownership seven years after the project was launched.

Joseph C. Dose, Salem district manager, said that Congress, in setting Yaquina Head aside as an ONA, provided the guidelines for management. The preservation and protection of wildlife habitat and scenic and historic values will be the primary functions of management. A draft management plan and environmental assessment is undergoing public review this fall.

Dominant on the tip of the headland is the Yaquina Head Lighthouse, which was constructed in 1872 and is the responsibility of the U.S. Coast Guard. Several small islands lying immediately offshore are part of the Oregon Islands National Wildlife Refuge, managed by the U.S. Fish and Wildlife Service. A variety of marine birds nest in the area, and migrating gray whales are seen from Yaquina Head.

FERRETING OUT THE WHEREABOUTS OF A RARE AND ENDANGERED SPECIES

By D. Scott Brayton

Things haven't been quite the same around the small ranching community of Meeteetse, Wyoming, since the fall of 1981. That's when a dog on a nearby ranch unwittingly triggered one of the most significant wildlife discoveries of all time by killing a weasel-like creature that turned out to be the rarest member of the weasel family of all—a black-footed ferret.

The area where the black-footed ferret was discovered and where research is presently being concentrated lies in the Bureau of Land Management's Worland District, about 30 miles south of Cody, Wyoming. It consists of roughly 80 square miles in the Cody Resource Area. Of the 7,000 acres where the ferret exists in prairie dog towns, 1,000 acres are managed by BLM.

Naturally the BLM staff from the Worland District, Cody Resource Area and the Wyoming State Office have become deeply involved in the ferret recovery effort. They have been providing detailed baseline data on prairie dog town inventories to the Wyoming Game and Fish Department. These inventories give the locations and sizes of prairie dog towns which the ferrets are dependent upon for survival. This information has proved useful in designing a system of evaluating, monitoring and mitigating the impacts from development on potential ferret habitat in the Big Horn

Basin and identifying potential relocation sites. It is also helpful to BLM since land use plans and multiple use decisions are now affected by the black-footed ferret discovery and associated research.

Much of the ferret habitat is on oil and gas fields under development or leased for future development. At a meeting with BLM, the Wyoming Game and Fish Department and other agencies, the energy companies agreed to accept a moratorium on development in exchange for lease extensions. They also appointed representatives to work with the ferret research efforts to ensure oil and gas activities and the preservation of this rare animal will not be in conflict. Everyone came away from the meeting smiling.

Are there black-footed ferrets inhabiting BLM land? You bet! According to Dave Belitsky, former BLM employee and now the black-footed ferret coordinator for the Wyoming Game and Fish Department, "BLM's land is ferret habitat. There's a prairie dog town we call the BLM 13 Town with at least one litter of ferrets on it right now." There is also a strong indication that black-footed ferrets may be living on other BLM lands across

Wyoming. Skeletal remains have been found in other parts of Wyoming on public lands and Belitsky believes it's just a matter of time before more live ferrets are sighted.

Based on a 1982 census, it is estimated at least 22 adult black-footed ferrets and 12 litters were living in the present research area near Meeteetse. Preliminary counts for 1983 show an increase in 14 litters comprising some 60 animals. Locating ferrets is painstaking work because the creatures appear mostly at night and the number of researchers available varies from 2 to 12 depending on the time of year. That's spread mighty thin over 7,000 acres and even more thinly when you consider all the thousands of acres in Wyoming and other states yet to be searched and studied for the elusive animal.

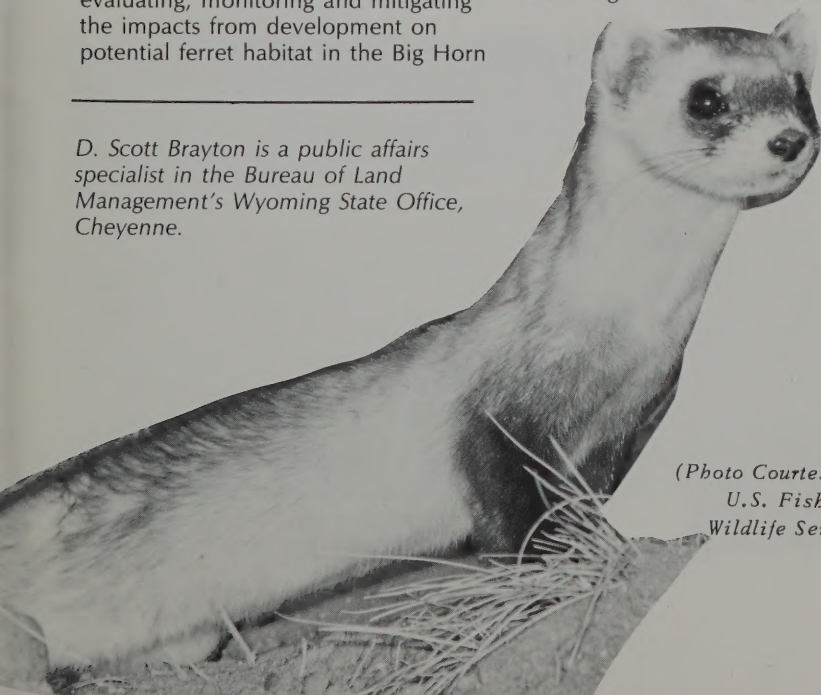
Since the ferret's discovery, a Black-Footed Ferret Advisory Team (BFAT) has been established. A Black-Footed Ferret Recovery Team designed to implement recovery efforts nationwide has also been significantly influenced by the Meeteetse ferret find. Jim Roseberry, wildlife biologist for the Wyoming State Office, represents BLM on both teams and advises the Wyoming Game and Fish Department and the U.S. Fish and Wildlife Service on ferret management.

The Black-Footed Ferret Advisory Team consists of representatives from the BLM, Forest Service, U.S. Fish and Wildlife Service, University of Wyoming, Wyoming Game and Fish Department, plus the Wyoming commissioner of Public Lands and the manager of the Pitchfork Ranch where most of the ferret habitat is found. The function of BFAT is to make recommendations on the direction of research and management of the ferret population. One of the major concerns of the Wyoming Game and Fish Department is to develop a centralized research fund. Currently researchers must obtain their own funding and submit their proposals to BFAT for review. A BFAT-administered research

(Photo Courtesy of
U.S. Fish and
Wildlife Service)

(Continued on page 22)

D. Scott Brayton is a public affairs specialist in the Bureau of Land Management's Wyoming State Office, Cheyenne.



Something New Under the Sun

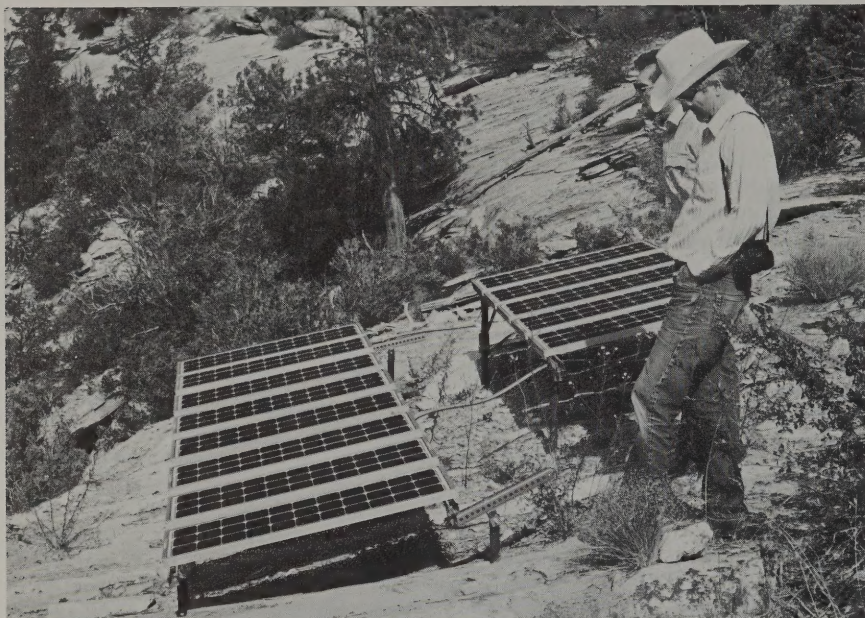


Fig. 1 Photovoltaic panel installation.



Fig. 2 Solar-powered water pump.

by Dave Stevens

Space-age technology has come to the Grand Junction District in Colorado. Range conservationists have harnessed the sun's rays to insure a reliable water supply for livestock and wildlife.

Lush stands of crested wheatgrass, needlegrass, Indian ricegrass, western wheatgrass, and Junegrass now occupy ridges and mesas in the Gibbler allotment where junipers and pinyon pines were removed by chaining in the early 1970s. Chaining involved dragging heavy anchor chains (with 90-pound links) between two tractors to topple the scrubby trees which had prevented the growth of understory vegetation.

However, stockwater ponds created by building dams across drainages to catch the intermittent rainfall or snowmelt proved to be inadequate. With rainfall totaling only 14 to 16 inches annually, the ponds were unreliable in providing water for grazing animals.

A more reliable, permanent source of water was needed for use in conjunction with the available forage. Gibbler Spring, located on the edge of the revegetated area, was the best potential source, but it was 10 miles from the nearest electric line and 240 feet down a steep canyon face.

Sunshine was plentiful, so the idea of a solar-powered water pump seemed to have merit. The idea proved to be feasible, and a system was designed that included a sump at the seep, solar panels to operate the pump, a pipeline to a 60,000-gallon storage catchment, and a line to a watering trough.

Figure 1 shows the array of 13 photovoltaic panels arranged on a metal support structure that was bolted to an exposed sandstone



Fig. 3 Water pipeline, 240 feet up the hill.



Fig. 4 Rubber-lined water catchment.

bench, 100 feet below the canyon rim and 100 feet above the spring. The panels can withstand 100 miles per hour winds. They produce 240 volts of DC current, with the amperage varying between 0.5 and 4.0, depending on the cloud cover. A transformer and power tracker convert solar power to power to run the pump. Wiring in a conduit fastened along the canyon face carries electricity to the pump.

Figure 2 shows the pump installation. The seep was dug out and then gravel was packed around a two-foot length of a four-foot, punctured culvert, where water accumulates. A

half-inch steel plate covers the top of the culvert section and serves as a platform for the pump and transformer.

Figure 3 shows the galvanized pipe through which water is raised 240 feet by a 0.55-horsepower piston pump at the rate of four gallons per minute.

Figure 4 shows the rubber-lined catchment that was dug to store 60,000 gallons of water pumped uphill from Gibbler Spring. The inlet to the catchment is equipped with a float valve which activates a pressure switch on the pump. When the catchment is filled, the pump is switched off.

Figure 5 is a water trough near the catchment that is connected to it with a plastic pipeline, one and one-half inches in diameter. As the system is expanded, seven miles of pipeline will supply twelve troughs distributed over the entire rehabilitated area.

Installation costs of the solar-powered water pumping system were lower than for other kinds of systems because of the inaccessibility of the area. Maintenance costs have been low, also. Range managers hope that public understanding of the importance of the project will prevent vandalism to the solar panels and other parts of the system, so that water will be available as long as the sun shines and the grass grows.

Dave Stevens is a range conservationist in the Bureau of Land Management's Grand Junction District in Colorado.

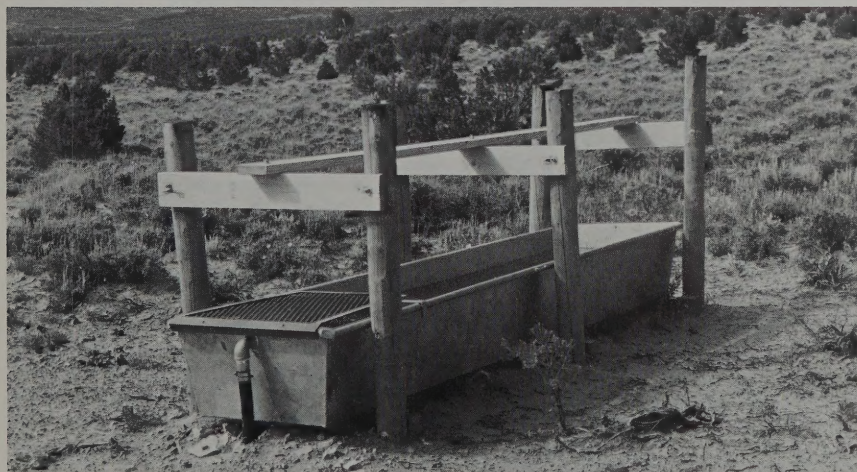


Fig. 5 Water trough served by sun pump.

(Continued from page 19)

fund would allow the team to fund the highest priority research proposals and create a better integrated operation.

The Black-Footed Ferret Recovery Team provides a means for combining varied efforts into a single effective program aimed at improving the status and ultimately the recovery of the ferret. It is composed of scientists who are writing a recovery plan for ferret habitat in the 11 western states where the animal is thought to exist. The plan will identify factors affecting the biological status of the black-

footed ferret and problems to be overcome. This plan when completed, will be updated as needed for protecting and preserving the species.

BLM is actively involved in other aspects of the ferret program, too. It supports research by the University of Wyoming on ferret habitat and the dependency by ferrets on prairie dogs as a food source plus the effects of oil and gas exploration on the ferret's prey base. The Wyoming State Office is also reviewing, editing and printing a handbook on recently updated methods for locating ferrets. This handbook is being written by Idaho State University/Biota Inc. and the

U.S. Fish and Wildlife Service. Radio telemetry equipment is being purchased by BLM which will allow researchers to track and study the ferret's movements and litter dispersal. The information gathered through ferret research is being distributed to other BLM offices throughout the West as other states begin looking for the slim, masked animal that has caused so much excitement throughout not only the United States but the World.

What lies ahead? It seems that BLM and the black-footed ferret's future are intertwined, and BLM is committed to ensure the survival of the rare black-footed ferret on your public lands.

Underground Coal Gasification Said Feasible in Cost

Lawrence Livermore National Laboratory (LLNL) reports a recent study shows that many chemical products like methanol, hydrogen and carbon dioxide can be produced at least as cheaply by underground coal gasification as by conventional means.

The study indicates that methanol, for example, can be synthesized through underground coal gasification at a cost of between 50 and 60 cents a

gallon or 25 percent less than the 70 to 80 cents a gallon cost of manufacture by conventional means.

Boosts Octane

Douglas R. Stephens, who heads the LLNL underground coal gasification program, terms the process "economically viable despite falling oil prices." Methanol, Stephens says, is expected

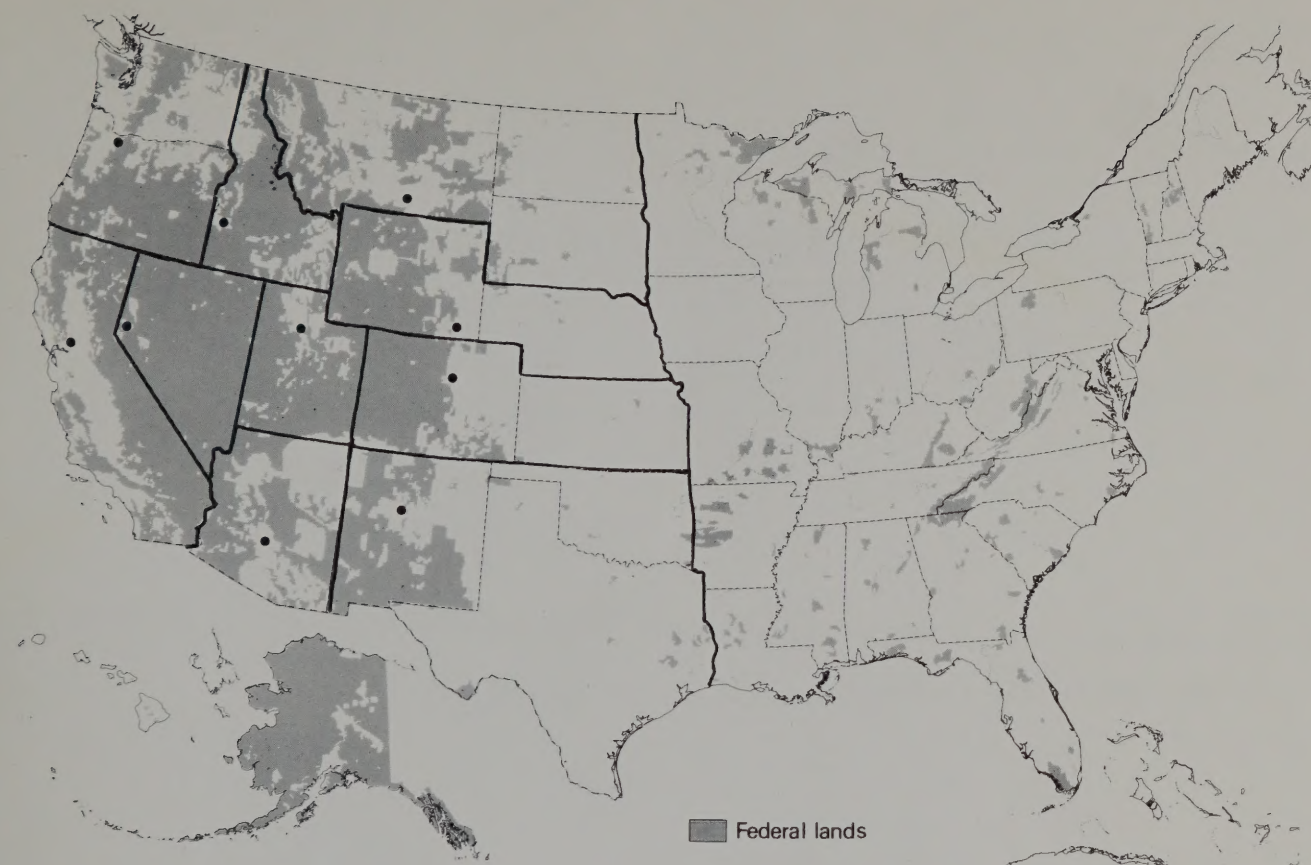
to get increased use to boost octane in unleaded gasoline.

LLNL scientists claim the energy equivalent of upwards of 50 times the natural gas reserves of the United States could be extracted from the 1.2 trillion tons of coal that cannot be reached practically or economically except through underground gasification.



Exhibit Emphasizes Coordination of Uses

How BLM's minerals program is coordinated with the uses of other resources is emphasized in this exhibit. The 14 panel display is 8 feet tall and 30 feet wide. During July and August, hundreds of visitors and employees viewed it in the Department of the Interior building in Washington, D.C. Constructed by the U.S. Geological Survey's visual information staff in cooperation with the Bureau of Land Management, the exhibit was used first in May during a meeting of the American Mining Congress in St. Louis, Missouri.



SERVICES PROVIDED BY THE BUREAU OF LAND MANAGEMENT

Since 1812, the Bureau of Land Management (BLM) and its predecessor agencies have provided a variety of services to the public. All land west of the first thirteen states was the original public domain. From it, most of the national forest, national park, and national wildlife refuge systems were created. The lands best suited for agriculture passed into private ownership. Congress provided major grants of land to states, colleges, and railroads.

All of the public lands remaining after such transfers are managed by BLM.

Management of these public lands by BLM is decentralized to 12 state offices, which guide the management of the natural resources of the lands in 55 districts and their 154 resource areas.

Specific information about opportunities to enjoy the benefits of BLM lands and resources can best be obtained from the state office or district office responsible for the area of interest.

Most BLM lands are available for a wide variety of recreational activities, including sight seeing, picnicking, camping, hunting, fishing, watching wild horses and other wildlife, boating, skiing, and rock hounding. A map brochure called "Camping on the Public Lands," which lists principal recreation sites, is available from all BLM offices. Limitations on kinds, seasons, or areas of use apply in certain

localities.

About 21,000 livestock operators pay grazing fees for the use of BLM rangelands, in accordance with permits and leases issued by district managers.

District managers sell about a billion board feet of timber annually in competitive auctions. Following harvest, the timberlands are promptly reforested and the new stands are carefully tended.

Minerals are made available for public use in several ways. Certain common minerals—like sand, gravel, and rock for road construction—are sold to the users at fair market values.

Locatable minerals—like gold, mercury, uranium, molybdenum, copper, etc.—can be claimed by filing a notice of location in the appropriate county and BLM state office, provided that the federal land is open to location and previous mining claims have not been filed. Records of mining claims are maintained by BLM state offices.

Leasable minerals—like oil, gas, coal, geothermal, nitrates of potassium and sodium, etc.—can be acquired by one of three methods, depending on the circumstance. Lands from which minerals may be extracted may be leased: (1) competitively; (2) over-the-counter on a first come, first served basis; or (3) if the lands have been leased previously, by drawings to select lessees from among

those persons whose applications are considered to have been filed simultaneously. Regardless of the means by which a lease is acquired, royalty payments based on a percentage of the value of the mineral are paid as the mineral is extracted. Information about the availability of mineral leases can be obtained from BLM state offices.

The Federal Land Policy and Management Act of 1976 established the policy that BLM public lands are to be managed under principles of multiple use and sustained yield in accordance with resource management plans developed with public involvement. Harmonious and coordinated management of the various resources is designed to ensure the productivity of the land and the quality of the environment.

If as a result of land use planning, it is determined that certain parcels of land are surplus to federal needs, title to them may be transferred to other owners. Information about opportunities to purchase such lands may be obtained from BLM state offices. Generally, lands are competitively sold at not less than appraised values.

All Americans benefit either directly from the use of BLM lands and the resources they produce or indirectly from the resource revenues that go to the U.S. Treasury.

U.S. DEPARTMENT OF THE INTERIOR

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